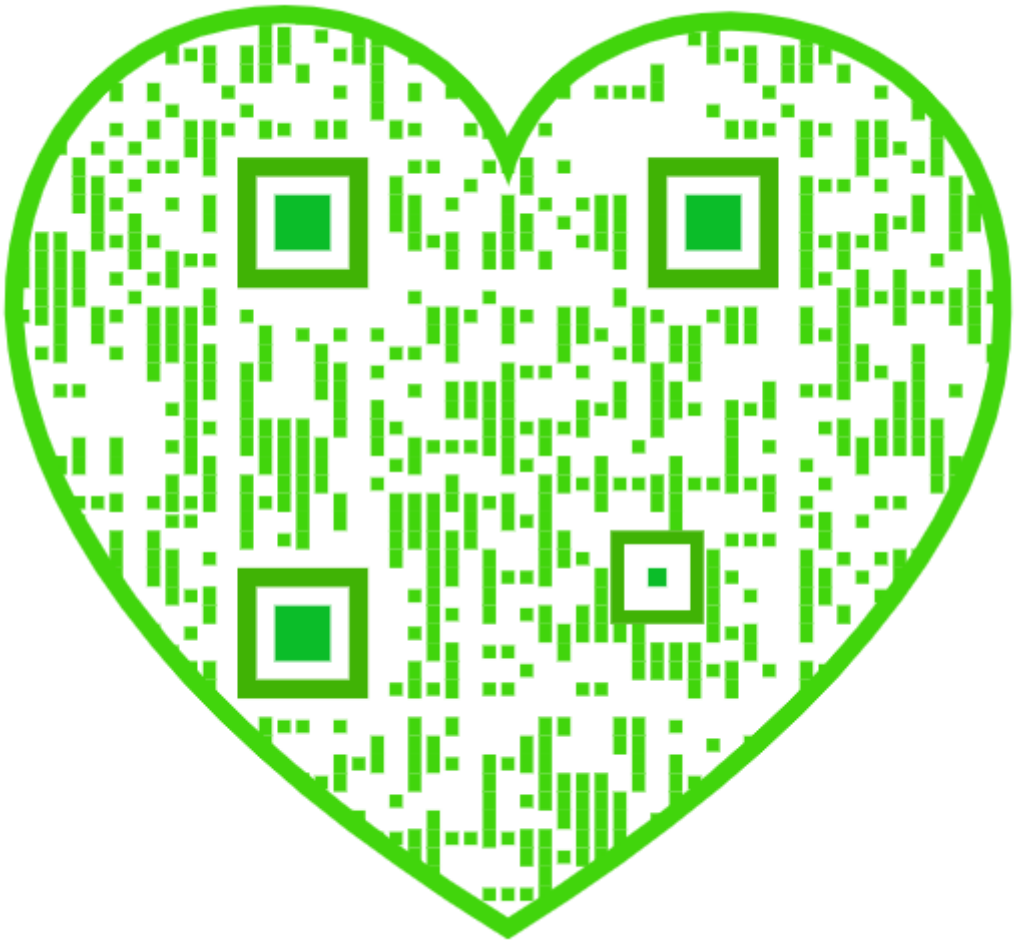

New Haven, city and harbor, as seen from East Rock

GEOGRAPHY OF CONNECTICUT

By Henry T. Burr
Principal, Willimantic Normal School, Willimantic, Connecticut

EARLY HISTORY

The first settlement in Connecticut was made about 1614 by the Dutch, who sailed up the Connecticut River and established a trading post where the city of Hartford now stands. They chose this location because it was near the head of navigation on the river and therefore convenient for their purpose as traders. In 1633 English settlers from Massachusetts began to come to the same region. They were attracted by the strips of fertile land which border the river on both sides at this point. The first English settlements were made at Windsor, Wethersfield, and Hartford, and soon afterward the intervening territory was occupied. There was constant friction between the English settlers and the Dutch traders. The latter were soon outnumbered and finally withdrew, leaving the English in full possession.

English settlements were independently made at Saybrook in 1635 and at New Haven in 1638. Saybrook was chosen because of its situation at the mouth of the Connecticut River, which provided a harbor and offered easy access to the interior. New Haven was selected for its excellent harbor and also because of the broad lowland which lay to the north of it.

Other settlements soon developed along the shore both east and west of New Haven as well as in the central lowland. In 1662 these settlements were all united under the name of the Connecticut colony by a charter granted by King Charles II. The influence of geographical conditions in determining the location of the settlements of the colony is indicated by the fact that, of the first twenty settlements, ten were on the coast, six on the river, and two on both coast and river. The uplands were not settled until later, after the more favorable locations were largely occupied.

Connecticut undoubtedly owes its independent existence as a colony and later as a state to its geographical conditions. The fertile lowland which attracted the early settlers was separated from the Massachusetts Bay colony by over a hundred miles of

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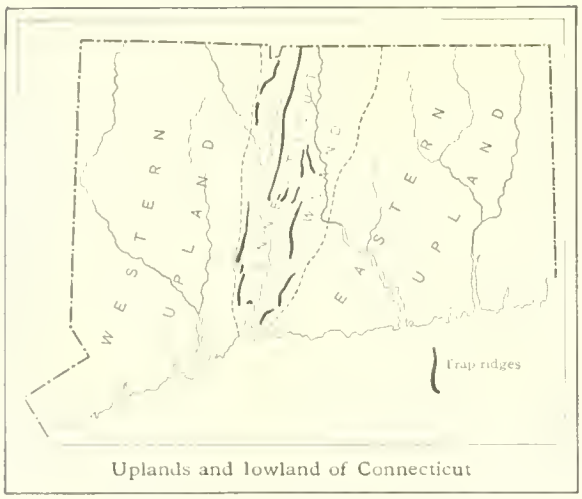


Uplands and lowland of Connecticut

rough wilderness, which, at that time, offered no inducement to settlers and was without roads other than Indian trails. Thus the Connecticut settlers soon became used to governing themselves, and Massachusetts made no determined effort to exercise authority over them.

POSITION, FORM, AND SIZE

Position and Form.—Connecticut is the southernmost of the New England states. It is roughly rectangular in shape, its length from east to west being nearly twice its breadth from north to south.

Size.—Connecticut is one of the smallest states. It occupies but one degree of latitude and a little less than two degrees of longitude. An automobile can easily go from Rhode Island on the east to New York on the west in less than a day, and the fast express trains running from Boston to New York cross it in about three hours.

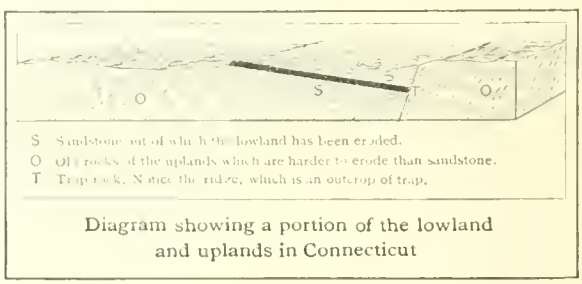
It is about four times the size of the neighboring state of Rhode Island, which is the smallest in the country. It is less than one sixth the size of Maine, the largest New England state, and it would take nearly fifty-four states the size of Connecticut to equal the area of Texas.

RELIEF

Uplands and Lowland.—Connecticut is divided into three parts,—an eastern upland, a western upland, and a broad lowland lying between. In a general way the uplands are alike. Each consists of numerous hills, rounded and smooth of slope for the most part but occasionally broken by rugged cliffs. Neighboring hills rise to the same general level. Very rarely does a single hill overtop the others near it. In general, the eastern upland is lower than the western. In both the heights increase gradually from the shore northward. The greatest altitudes of Connecticut are in the northwest corner of the state. Bear Mountain, in the extreme northwest, with a height of 2355 feet, is the highest peak.

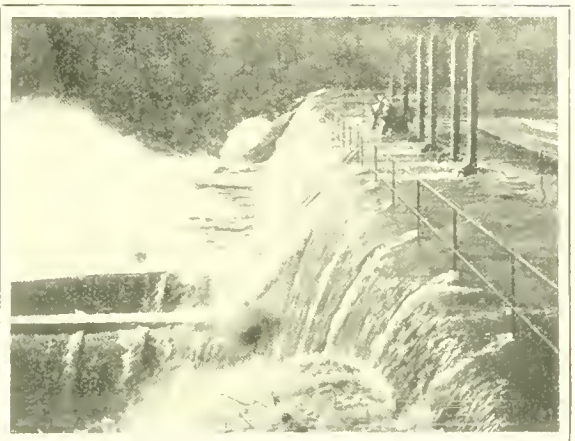
The central lowland is underlain by softer rocks than those of the uplands, and by weathering and erosion this region has been reduced to a nearly level plain. Some layers of trap, a lava rock, in the soft sandstone are harder and stand up as ridges above the general level. East Rock and West Rock at New Haven, the Meriden Hills, and the ridge running from Meriden to Mount Tom and Mount Holyoke in Massachusetts are of this character.

Glaciation.—Connecticut lies within the glaciated region. The great ice sheet moving southward over the hills smoothed them into the rounded forms that are now so common. The materials worn from the hills were spread over the lowlands. In places this material, known as till, was heaped


S
T
O
S Sandstone out of which the lowland has been eroded.
O Old rocks of the uplands which are harder to erode than sandstone.
T Trap rock. Notice the ridge, which is an outcrop of trap.
Diagram showing a portion of the lowland and uplands in Connecticut

JUL -7 '21

by the moving ice into rounded hills called drumlins. Such hills are found in Pomfret in eastern Connecticut and near New Britain in the central lowland. The streams from the melting glacier carried much sand and clay into the valleys and there deposited these materials. Much of the original soil produced by the weathering of the underlying rocks was removed and replaced by clay and other glacial materials which the ice brought from other places to the north. In places the glacial deposits acted as dams to form lakes. In other places they produced falls and rapids. Connecticut owes its many ponds and its fine water power to glacial action.



Dam in Farmington River, Tariffville

Coast.—The coast of Connecticut is rocky and irregular but lacks the cliffs and bold promontories of the northern New England coast. The irregularity of the coast line produces some excellent harbors. Those at New London, New Haven, and Bridgeport are the most important. Others, however, are used as ports for fishing boats, pleasure craft, and small coastwise vessels. New London harbor is the only one deep enough for large steamers.

DRAINAGE

The Connecticut is the longest and one of the most important of the New England rivers. It early formed one of the great trade routes of the region, first as a waterway and later as a route for railroads which extend along its banks throughout almost its entire length. Its falls and rapids have been dammed to furnish power to many mills. Its strips of flood plain and terraces afford, on the whole, the most fertile farm land in New England. It is navigable to vessels of moderate draft as far as Hartford, nearly fifty miles from its mouth. From the Massachusetts line on the north to Middletown it lies within the lowland. At Middletown it enters the eastern upland and flows to the sea in a narrow, picturesque valley.

The Housatonic River rises in the Berkshire Hills of Massachusetts, and traverses the western part of Connecticut from north to south. Its main tributary, the Naugatuck, furnishes water power for some of the most prosperous manufacturing cities in the state.

Connecticut Valley near Middletown. Notice where the river leaves the broad lowland and enters the upland

The Thames, really a tidal estuary rather than a river, is navigable to Norwich. Its mouth, at New London, forms one of the finest harbors on the Atlantic coast. Its head waters, the Shetucket, Quinnebaug, and Willimantic rivers, furnish abundant water power.

There are many ponds and small lakes, due, in most cases, to glacial obstructions in the river valleys. These are valuable as reservoirs which restrain the floods in rainy seasons and maintain the flow of the rivers in dry periods. Some have been enlarged for this purpose by dams built across their outlets. Many summer visitors are attracted to these lakes by their beauty and the opportunities for boating and fishing which they afford. Bantam Lake, in the towns of Morris and Litchfield, is the largest body of fresh water in Connecticut.

CLIMATE

The climate of Connecticut resembles that of the other New England states. It is cold in winter and warm in summer, but sudden changes of temperature are liable to occur in all seasons. There is less snowfall in Connecticut than in the northern New England states, and, except in the extreme northwest, the snow seldom lies on the ground for long periods.

Oyster vessels and shell heaps

The rainfall is, on the whole, abundant, reaching a yearly average of about forty-five inches. Dry spells are, however, not uncommon and are sometimes serious to the farmers and to those manufacturers who depend on water power. In fact, most factories which use water power have steam plants ready for use when the water power is not sufficient for their needs.

FORESTS, GAME, AND FISH

Forests.—A considerable portion of the state is covered with trees. The original forests, however, have been cut off and most of the trees now standing are of comparatively recent growth. Lumbering has, therefore, ceased to be a very important industry, although carried on in a small way in all parts of the state. The trees are largely oak, maple, chestnut, and other hardwoods, and scattering growths of the softwoods, particularly pine, hemlock, and cedar.

Game.—The larger wild animals excepting the deer have disappeared from Connecticut. The deer have been protected by law in recent years and have become very numerous. Small game is still fairly abundant in the uplands.

Fish.—Fishing is carried on in a small way at many of the shore towns, but there is no large market for fish in the state. The cultivation of oysters is an important industry at many places along the shore, and the total value of the product is considerable. The natural oyster beds which formerly existed in great numbers along the entire shore have become greatly depleted and are no longer used except for the gathering of young or "seed" oysters. These are planted in favorable localities and carefully cultivated until they reach marketable size. Shad fishing was formerly an important industry on the Connecticut River. It is still carried on, but the catch is growing smaller.

AGRICULTURE

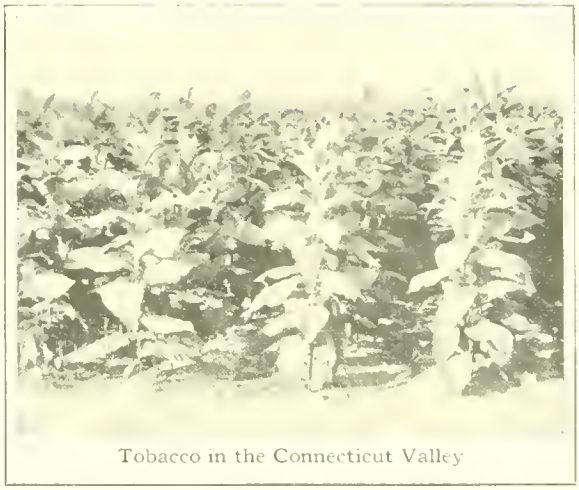
Soil.—The soil of Connecticut is largely glacial in its origin. It is often so full of bowlders that it cannot be profitably worked, and large areas are fit only for pasture and woodland. The rough stone walls so characteristic of New England hill farms bear witness to the heavy labors of the early settlers in clearing the land for tillage. The central lowland contains much good soil. It is composed largely of sand and clay washed from the glacier during its melting stages. This soil is not richer than the bowlder clay of the uplands, but is finer and more easily worked. The level or gently rolling surface of the lowland region is also a great advantage to the farmer, making possible the more extensive use of labor-saving machinery and reducing the cost of carrying his products to markets. Good farm lands are found in other parts of the state along the streams and in places among the hills.

Products.—The leading crops of the state, in the order of value, are hay, tobacco, potatoes, and corn. Tobacco is largely raised in a limited area in the northern part of the central lowland and in the vicinity of New Milford in the western part of the state. Connecticut tobacco is largely used for the outer layers or "wrappers" of cigars. The other three crops are rather evenly distributed over the entire state.

The large number of near-by markets, including those of Boston and New York, and the excellent railroad connections are great advantages to the Connecticut farmer. These make it profitable to engage in market gardening, dairying, and poultry raising. For the same reason flowers, nursery stock, and small fruits are extensively grown, largely on small farms near the cities.

MINING AND MANUFACTURING

Mining.—The rocks of the Connecticut uplands contain a great variety of minerals.

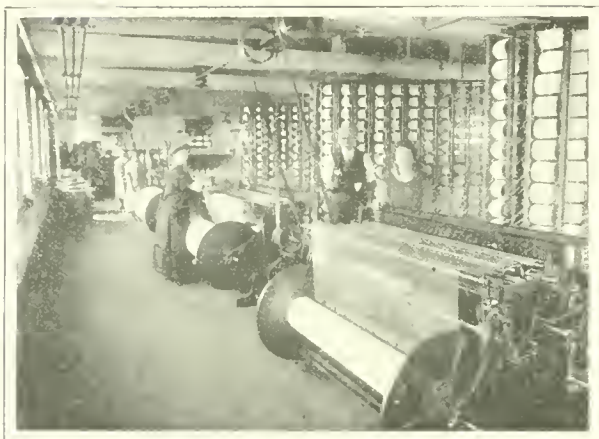


Tobacco in the Connecticut Valley

In former times copper, iron, and lead were mined. The deposits are not, however, in paying quantities, and the only mine now in operation is a small iron mine near Salisbury. This mine can be worked profitably in competition with the great iron ore deposits in other sections of the country because of the presence of manganese in the ore. This unites with the iron in smelting and produces a very tough metal which is particularly adapted to the manufacture of car wheels.

Granite quarries are found in a number of places, notably at Stony Creek and Thomaston. Many small quarries scattered through the upland region produce a stone which is known locally as granite but which is really gneiss. It is an inferior stone which is used largely in foundations and walls of buildings.

The red sandstone of the Connecticut lowland, known commercially as brownstone, was formerly quarried extensively at Portland. Brownstone is, however, no longer in fashion as a building stone and the industry has dwindled. Feldspar is quarried at Glastonbury, Portland, and Haddam. It is used in the manufacture of porcelain. Kaolin, used for a similar purpose, is quarried in the town of Sharon. Limestone is quarried in North Canaan both for marble and for the manufacture of lime. The Capitol at Hartford is made of marble from these quarries.



Warping department of a cotton mill, Putnam

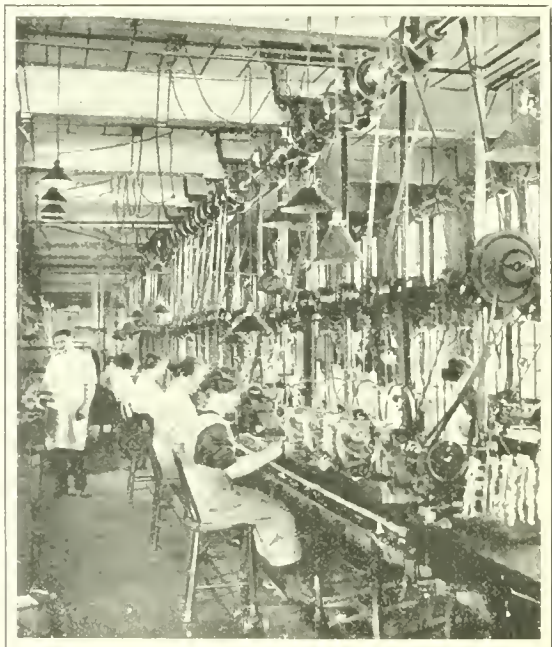
Typewriter factory, Hartford

Extensive deposits of brick clay are found in the lowland from the Massachusetts line to New Haven.

The hills of the lowland region afford an unlimited supply of trap rock. This is crushed and used for surfacing roads and building concrete walls.

Manufacturing.—The chief wealth of Connecticut lies in its manufactures. When the great agricultural lands of the Middle West were opened to settlement, the Connecticut farms were unable to compete with the more productive farms of the West, and the people turned their attention largely to manufacturing. They were led in this direction also by the abundance of water power, and by the nearness of large cities where the products could be sold. The people seem to have been particularly adapted to manufacturing, and their inventive genius has become proverbial. In later years the railroads passing through Connecticut, between Boston and New York, have been important factors in the growth of manufacturing. In spite of the lack of raw materials, practically all of which have to be imported, the growth of manufacturing has been rapid and still continues.

The variety of manufactured products is very great even within the limits of each of the cities. In general, however, the area east of the Connecticut River is devoted to textile industries, while the central and western sections produce metal goods. Since the raw materials for the latter industries must be brought from considerable distances at heavy freight charges, it is found most profitable to produce goods which require considerable skill in manufacture, such as clocks, builders' hardware, cutlery, and firearms, rather than the bulkier metal products.



Clock factory, Thomaston

TRADE ROUTES

Long Island Sound is an important waterway for Connecticut. Steamers run daily from Connecticut ports to New York. There are also steamboat connections with Long Island. The Connecticut and the Thames rivers carry the Sound traffic inland.

The chief railroad routes lie along the shore and in the Connecticut lowland from Springfield in Massachusetts to New Haven. Along these routes it has been possible to build railroads without steep grades or sharp curves. Other important railroad lines follow the valleys of the larger streams. The Willimantic, Quinnebaug, and Thames in the east, the Farmington in the north, the lower Connecticut in the south, and the Housatonic and Naugatuck in the west are bordered by railroads. The only railroad line of importance which does not closely follow the larger rivers is the line which traverses the state from east to west through Willimantic, Hartford, Waterbury, and Danbury. In spite of its sharp curves and steep grades this road is important because it forms the shortest route between some of the large Connecticut cities and because it connects with railroads from the west.

Capitol, Hartford

As noted before, a part of Connecticut's industrial prosperity is due to its location on railroad lines between Boston and New York. Through trains between these two cities cross the state over three separate routes, and give nearly all the cities of the state direct access to these two great seaports. Two important freight routes from northern New England and Canada traverse the state, one passing through Palmer, Massachusetts, to New London, the other through Springfield to New Haven.

GOVERNMENT

The most striking feature of state governments in New England is the importance of the local unit, or town. Annually the legal voters of each town gather together in a town meeting to elect officers, to lay taxes, and to determine the policy of the town for the coming year. The chief officers are the selectmen.

When the population of a town becomes so large that its problems become too complicated to be dealt with in a popular assembly, the town or, in some cases, the populous section of the town applies to the legislature for a city charter. City governments are not uniform even for cities of the same size. In general, however, provision is made for a representative body known as the city council or board of aldermen, which is elected by the people and makes laws or ordinances for their government. A mayor is also elected, whose duty it is to see that the ordinances are carried out.

A borough, in Connecticut, is a unit of government intermediate between that of the town and the city. Its chief executive is called the warden and its legislative body the burgesses. The borough officers are not given so much authority as are those of the city, and the popular assembly is retained.

The strong tendency, to preserve the influence of the town in Connecticut, is shown in the manner of choosing representatives to the state legislature. This consists of two

Connecticut Agricultural College, Storrs

legislative bodies, the senate and the house of representatives. No town may elect more than two representatives to the latter body. Thus New Haven, with its large population, has no more representatives than the smallest town in the state with a population of less than four hundred. The senators are chosen by senatorial districts, which are made as nearly equal in population as possible. Thus the Connecticut senate represents the people; the house of representatives, the towns.

The legislature makes the laws by which the state is governed. The enforcement of the law is intrusted to the executive department, of which the governor is the head. Other officers of this department are the lieutenant governor, the secretary of state, the treasurer, and the comptroller. The latter two officials look after the state's financial affairs. Boards or commissions are appointed to carry out important activities of the state. Among these are the board of education, the board of agriculture, the board of health, the public utilities commission, the workmen's compensation commission, and the highway commissioner.

The judicial department of the state consists of a supreme court, a superior court in each county, and justice courts in each town for minor affairs. Other courts are established for special purposes.

The state is divided into eight counties. The county is, however, in Connecticut, of very slight political importance. The chief officials in the county are the county commissioners.

EDUCATION

The educational interests of the state are in the hands of the state board of education. The executive officer is the secretary of the board. In accordance with the strong feeling in Connecticut for local self-government, the towns are allowed much freedom in conducting their schools, but the state board has many important powers.

The state maintains four normal schools for the training of teachers. These schools are located at New Britain, Willimantic, New Haven, and Danbury.

Connecticut Agricultural College, situated at Storrs, about eight miles north of Willimantic, is maintained by the state in conjunction with the national government.

Connecticut does not maintain a state university. It contains, however, four endowed institutions of this rank,—Yale University at New Haven, Wesleyan University at Middletown, Trinity College at Hartford, and Connecticut College for Women at New London.

Yale University is, with the exception of Harvard, the oldest in New England. It was founded at Saybrook in 1701 and moved to New Haven in 1717.

Hartford Theological Seminary at Hartford and Berkeley Divinity School at Middletown are important institutions for training ministers and religious workers.

POPULATION AND CITIES

Connecticut has a population of 1,380,631. If the people were evenly distributed over the whole state, there would be 286 to each square mile. Rhode Island, Massachusetts, and New Jersey are the only states in the country more densely populated.

The early population of Connecticut was

almost wholly of English descent. Within the last half century, however, immigrants from other parts of Europe have entered the state in large numbers. At first these came from northern and western Europe, but the later comers are largely from eastern and southern Europe. According to the last census over one quarter of the people of Connecticut were born in foreign countries.

The great industrial development of the last fifty years has tended to draw the native population also toward the cities. Thus the rural towns have grown very slowly or even, in some cases, have diminished in size. The cities, on the other hand, have had a rapid growth which still continues. About two thirds of the population of Connecticut now live in cities of 10,000 or more inhabitants. New Haven, Bridgeport, Hartford, and Waterbury, the four largest cities, have a combined population of about 400,000, which is more than one third of the total population of the state.

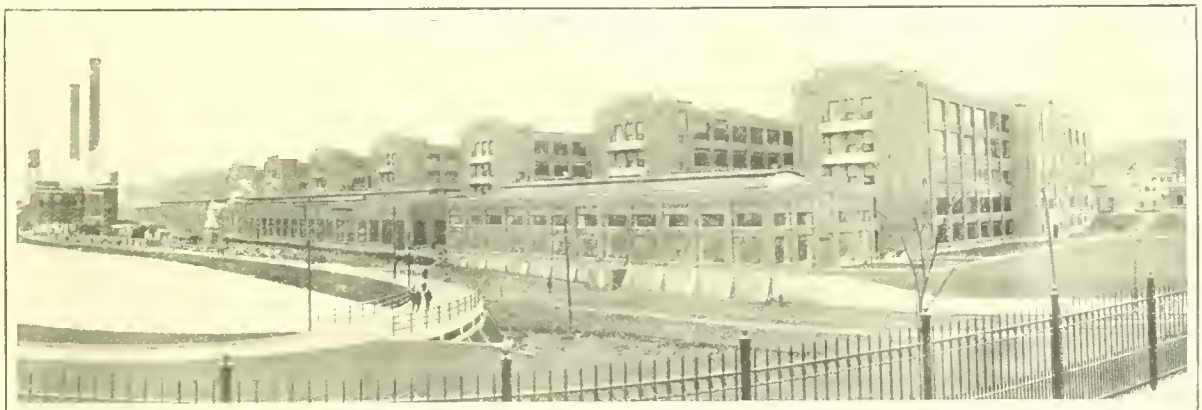
Coast Cities. — The two largest cities of Connecticut, New Haven and Bridgeport, owe their growth very largely to their harbor facilities. New London is another coast city that possesses a good harbor.

New Haven is the largest city in the state and the second in the value of its manufactured products. With its harbor and exceptional railroad facilities, it is a trade

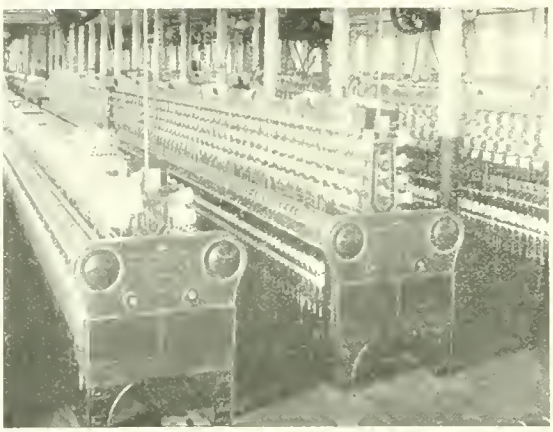
Buildings of Yale University, New Haven

center of importance. Its principal manufactures are hardware, plumbers' supplies, firearms, steam boilers, machinery, and other products of iron, steel, and brass. It is the seat of Yale University, long a powerful influence in the affairs of the state and in the educational world. The Green, fronting the university, in the heart of the city, with its row of historic old churches and its beautiful elms, is nearly as famous as the university itself.

Bridgeport, the first city in Connecticut in value of its manufactures and the second in population, is situated about seventeen miles west of New Haven, on the best harbor in western Connecticut. It owes its growth to



Factory for making army supplies, Bridgeport



Thread factory, Willimantic

its harbor and to its location near New York on the main line of traffic. Its principal products are guns and other munitions of war, submarines, sewing machines, electrical machinery, graphophones, corsets, and metal goods of many kinds.

New London, at the mouth of the Thames, is located on one of the finest harbors on the New England coast. In the days of the whaling industry it was a great shipping center and still has a considerable trade by sea. It is on the main railroad line between New York and Boston and is the terminus of the Central Vermont Railway, which brings freight from northern New England and Canada.

New London is the center of a group of summer resorts. Connecticut College for Women is north of the city.

The chief manufactures of New London are quilts and silk goods. Across the harbor, in **Groton,** is a plant for the manufacture of fine marine engines especially adapted to submarines. The United States government is developing a submarine base here.

South Norwalk is engaged in the coastwise trade and has a variety of manufacturing interests. **Stamford** is noted for its manufacture of locks. The modern type of locks with the flat key originated here. At **Greenwich** are the beautiful homes of people whose business interests are in the city of New York.

Cities of the Central Lowland. — In colonial days, the fertile soil of the Central Lowland led to rapid growth of settlements. The level surface of this lowland encouraged the building of railroads through it, and these are now the chief advantage which this region presents to the manufacturer.

Hartford, the state capital, is situated near the center of the state, at the head of navigation on the Connecticut River. Its fine capitol, with its beautiful park sloping toward the heart of the city; its many public buildings; and its broad and well-kept streets make it a very attractive city.

It is an important manufacturing city and one of the great insurance centers of the country. Its manufactures include machinery, firearms, typewriters, rubber tires, nails and screws, and other metal goods.

Railroads radiate from Hartford in all directions. These lines and the navigable river make it an important trade center. The fertile farm lands and the smaller manufacturing towns which surround it bring it much local traffic and help support its fine retail stores. Among the educational institutions located in Hartford are Trinity College and the Hartford Theological Seminary.

Next to Hartford the largest city in the lowland is **New Britain,** known as the "Hardware City." It manufactures a wide variety of metal goods, including builders' hardware, locks, cutlery, aluminum ware, screws, tools, and machinery.

Meriden, about halfway between Hartford and New Haven, is known especially for its silver-plating industries. It manufactures also lighting fixtures, cutlery, electrical appliances, and other metal products. The Connecticut School for Boys, a reformatory institution, is located here. **Wallingford,** near Meriden, also manufactures plated ware.

North of Hartford on the river are the manufacturing towns of **Windsor, Windsor Locks,** and **Enfield. Thompsonville,** in the town of Enfield, is noted for its carpet works.

East of Hartford is **South Manchester**, noted for its great silk mills. Still farther east, on the edge of the upland, a small stream falling to the valley below furnishes unusually fine water power to the city of **Rockville**. This is a textile city, manufacturing both cotton and woolen goods.

Middletown, at the bend of the Connecticut where it enters the eastern upland, manufactures hydraulic machinery, rubber goods, and textiles. Wesleyan University is located here. Near the city is a state hospital for the insane. Across the river is **Portland**, with its great brownstone quarries.

Bristol is situated on the western edge of the lowland where the Pequabuck, a tributary of the Farmington, issues from the hills. It makes iron castings, clocks, fishing rods, and a variety of metal goods. **Collinsville**, farther north on the Farmington River, manufactures tools.

Inland Cities of Eastern Connecticut.—The inland cities of eastern Connecticut are engaged chiefly in the manufacture of textiles.

Norwich, at the head of navigation on the Thames, is a prosperous manufacturing city. The Yantic and Shetucket rivers, which unite at this point to form the Thames, are swiftly flowing streams which furnish abundant water power. The chief manufactures are cotton textiles.

Norwich has a beautiful memorial library and art gallery. On the river, below the city, is a state hospital for the insane.

Willimantic, sixteen miles north of Norwich, is widely known as the "Thread City." In addition to thread, it manufactures cotton cloth and silk and velvet goods. It owes its location to the fine water power developed in the Willimantic River.

Grosvenor Dale, Putnam, Danielson, Plainfield, and **Jewett City,** in the eastern end of the state, are largely engaged in the manufacture of textiles.

Cities of the Naugatuck Valley.—The cities of the Naugatuck Valley are largely engaged in the manufacture of brass products.

Waterbury, the fourth city in population and the third in the value of its products, is located on the Naugatuck River at the junction of two important railroad lines. It is

Metal-working plant, Waterbury

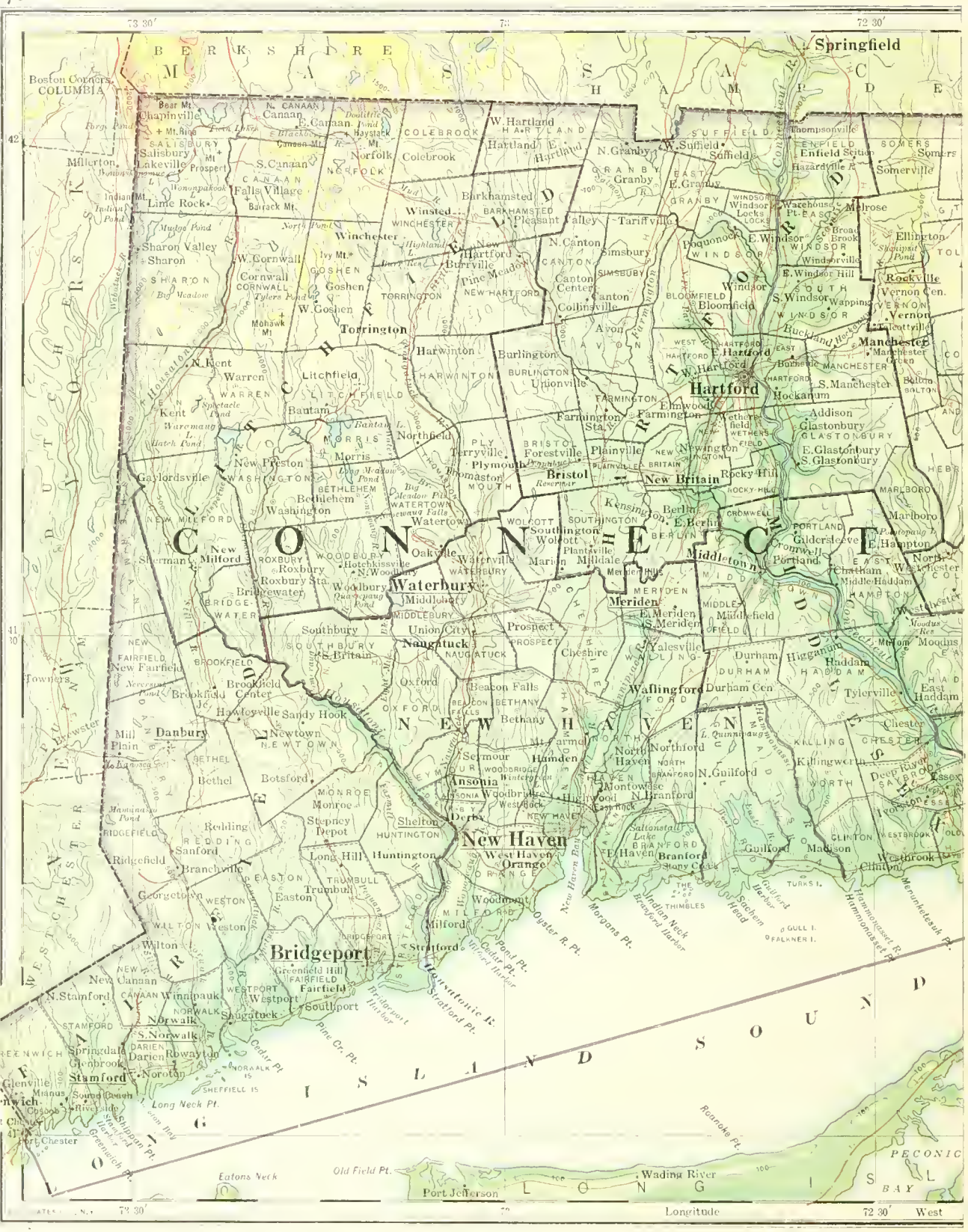
the leading center of the brass industry of the United States. Its products include rolled and cast brass and copper, German silver goods, clocks and watches, copper wire, and plated ware.

Torrington, in the north, produces rolled and sheet brass, needles, plated goods and castings. **Thomaston** has long been a center for the manufacture of clocks. **Naugatuck** and **Beacon Falls** produce rubber goods. **Ansonia** and **Derby** make heavy castings and brass products.

Inland Cities of Western Connecticut.—**Danbury** is the most important center in the country for the manufacture of hats. **Winsted**, in the northern part of the state, makes clocks, edged tools, and many other products.

CITIES AND BOROUGHS THAT HAD 2500 INHABITANTS OR MORE IN 1920

CITIES	POPULATION		CITIES	POPULATION	
	1920	1910		1920	1910
Ansonia	17,913	15,152	New London	25,688	19,659
Bridgeport	143,555	102,054	Norwalk	27,743	13,954
Bristol	20,620	19,527	Norwich	22,304	20,167
Danbury	19,943	20,234	Putnam	7,711	6,647
Derby	11,238	8,091	Rockville	7,720	7,077
Hartford	138,036	98,915	Shelton	9,475	4,807
Meriden	29,867	27,265	Stamford	35,096	25,138
Middletown	15,148	11,851	Waterbury	91,715	73,141
New Britain	59,316	43,916	Willimantic	12,330	11,230
New Haven	162,519	133,605			
BOROUGHS			BOROUGHS		
Bethel	3,251	3,041	Naugatuck	15,051	12,922
Branford	2,619	2,500	Southington	5,085	3,714
Danielson	3,130	2,934	Stafford Springs	3,583	3,050
Greenwich	5,989	3,806	Torrington	20,023	15,483
Groton	4,230	1,895	Wallingford	9,648	8,600
Jewett City	3,196	3,023			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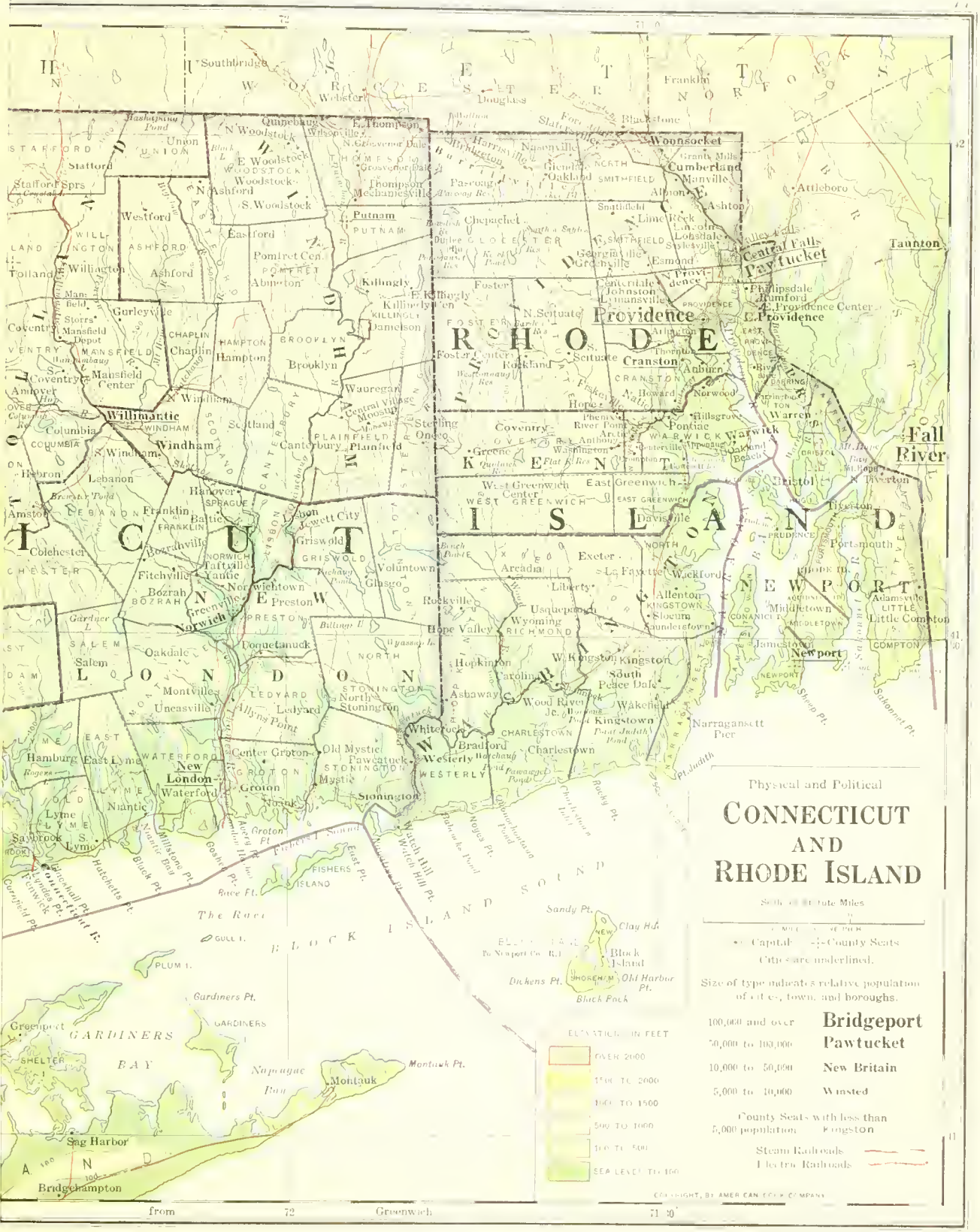
72 30′
Springfield
BERKSHIRE
MASSACHUSETTS
CONNECTICUT
Boston Corners
COLUMBIA
Millerton
Salisbury
Lakeville
Prospect
Lime Rock
Indian Mt.
Sharon Valley
Sharon
Cornwall
Goshen
W. Goshen
Torrington
Winsted
Winchester
Norfolk
Colebrook
Barkhamsted
Pleasant Valley
Tariffville
New Hartford
Burrville
Pine Meadow
N. Canton
Canton Center
Simsbury
Canton
Collinsville
Avon
Farmington
Harwinton
Burlington
Unionville
Litchfield
Warren
Kent
Bantam
Northfield
Morris
New Preston
Gaylordsville
Bethlehem
Washington
Watertown
Oakville
Watertown
Woodbury
Roxbury
Bridgewater
Waterbury
Middlebury
Southbury
Union City
Naugatuck
Prospect
Cheshire
Wolcott
Southington
Plainville
Milldale
Marion
Meriden
Middletown
Berlin
New Britain
Bristol
Forestville
Plymouth
Terryville
Farmington Sta.
Plainville
Newington
Rocky Hill
Wethersfield
Hartford
Elmwood
Farmington
Addison
Glastonbury
E. Glastonbury
S. Glastonbury
E. Hartford
W. Hartford
S. Manchester
Manchester
Rockville
Vernon Cen.
Vernon
Ellington
Somers
Somerville
Thompsonville
Enfield Section
Hazardville
Suffield
W. Suffield
N. Granby
E. Granby
Granby
Windsor Locks
Windsor
E. Windsor
Poquonock
Windsorville
E. Windsor Hill
S. Windsor
Wapping
Bloomfield
Windsor
Warehouse Pt.
Melrose
Broad Brook
Buckland
Talcottville
Marlboro
E. Hampton
Portland
Gildersleeve
Chatham
Middle Haddam
Haddam
East Haddam
Moodus
Tylerville
Durham
Higganum
Wallingford
Durham Cen.
Yalesville
Cheshire
Meriden
E. Meriden
S. Meriden
Middlefield
Prospect
Naugatuck
Union City
Southbury
S. Britain
Oxford
Beacon Falls
Bethany
Seymour
Ansonia
Derby
Shelton
Huntington
Long Hill
Trumbull
Easton
Georgetown
Redding
Sanford
Ridgefield
Branchville
Danbury
Mill Plain
Newtown
Sandy Hook
Hawleyville
Brookfield
Brookfield Center
New Fairfield
Bethel
Botsford
Monroe
Stepney Depot
New Haven
West Haven
Orange
Woodbridge
Hamden
Mt. Carmel
North Haven
Northford
N. Guilford
N. Branford
Montowese
Higganum
Saltonstall Lake
Branford
E. Haven
Guilford
Madison
Clinton
Westbrook
Killingworth
Deep River
Essex
Chester
Milford
Woodmont
Stratford
Bridgeport
Greenfield Hill
Fairfield
Westport
Southport
Wilton
Weston
New Canon
Winnipauk
Norwalk
S. Norwalk
Shugatuck
N. Stamford
Stamford
Springdale
Darien
Rowayton
Noroton
Glenville
Riverside
Cos Cob
Port Chester
Greenwich
Sheffield Is.
Long Neck Pt.
Eatons Neck
Old Field Pt.
Port Jefferson
Wading River
Long Island Sound
Oyster R. Pt.
Morgans Pt.
Indian Neck
Branford Harbor
Sachem Head
Guilford Harbor
Hammonasset R.
Menunketesuk Pt.
Pond Pt.
Cedar Pt.
Stratford Pt.
Housatonic R.
Pine Cr. Pt.
Roanoke Pt.
Peconic Bay
Thimbles
Turks I.
Gull I.
Falkner I.
Saltonstall Lake
Lake Quinnipiac
Quinnipiac R.
Mattabassett R.
Connecticut R.
Farmington R.
Pomperaug R.
Naugatuck R.
Housatonic R.
Still R.
Shepaug R.
Bantam L.
Waramaug L.
Lake Quassapaug
Candlewood L.
Lake Zoar
Lake Housatonic
Lake Lillinonah
Lake Waramaug
Bantam L.
Mohawk Mt.
Bear Mt.
Indian Mt.
Mt. Riga
Barrack Mt.
Canaan Mt.
Haystack Mt.
Ivy Mt.
Highland L.
Deep Meadow Pond
Big Meadow Pond
Quassapaug Pond
Lake Quinnipiac
Hanover Pond
Lake Saltonstall
Lake Housatonic
Lake Lillinonah
Lake Waramaug
Bantam L.


Physical and Political
CONNECTICUT AND RHODE ISLAND
Capitals
County Seats
Cities are underlined.
Size of type indicates relative population of cities, towns, and boroughs.
100,000 and over Bridgeport
50,000 to 100,000 Pawtucket
10,000 to 50,000 New Britain
5,000 to 10,000 Winsted
County Seats with less than 5,000 population Kingston
Steam Railroads
Electric Railroads
ELEVATION IN FEET
OVER 2000
1500 TO 2000
1000 TO 1500
500 TO 1000
100 TO 500
SEA LEVEL TO 100
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Providence
Newport
Hartford
New London
Bridgeport
Pawtucket
New Britain
Winsted
Kingston
Block Island
Long Island Sound
Narragansett Bay
Block Island Sound
Fall River
Taunton
Attleboro
Woonsocket
Willimantic
Norwich
Stonington
Westerly
Montauk Pt.
Sag Harbor
Bridgehampton
Greenport
Gardiners Bay
Napeague Bay
The Race
Watch Hill Pt.
Point Judith
Block Island
Old Harbor Pt.
Clay Hd.
Sandy Pt.
Dickens Pt.
Gardiners Pt.
Montauk Pt.
Narragansett Pier
Newport
Jamestown
Middletown
Portsmouth
Tiverton
Bristol
Warren
Barrington
Warwick
East Greenwich
West Greenwich
Exeter
Hopkinton
Richmond
Charlestown
South Kingstown
North Kingstown
Scituate
Foster
Glocester
Smithfield
Cumberland
Lincoln
North Providence
Johnston
Cranston
Pawtucket
Central Falls
East Providence
Seekonk
Rehoboth
Swansea
Somerset
Tiverton
Little Compton
Adamsville
Middletown
Jamestown
Newport
Narragansett Pier
Point Judith
Block Island
Old Harbor Pt.
Clay Hd.
Sandy Pt.
Dickens Pt.
Gardiners Pt.
Montauk Pt.
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Willimantic
Norwich
Stonington
Westerly
Hartford
New London
Bridgeport
Pawtucket
New Britain
Winsted
Kingston

Providence. View from Turk's Head Building

GEOGRAPHY OF RHODE ISLAND

By Robert M. Brown

Professor of Geography, Rhode Island Normal School, Providence, Rhode Island

HISTORY

"To hold forth a lively experiment that a most flourishing civil state may stand and best be maintained with full liberty in religious concernments." This is the inscription written on the Capitol at Providence, and the sense of the motto is expressed frequently in the early history of Rhode Island. Previous to 1636, the area about Narragansett Bay was inhabited solely by Indians and they have left behind them as monuments the many names of the physical features of the state. It is recorded that the explorer Verrazano discovered Narragansett Bay in 1524 and that Adrian Block, who gave his name to Block Island, explored the bay in 1614. The first permanent settlement was not made until 1636, when Roger Williams, driven from Massachusetts because his opinions were intolerable to his neighbors, established near the headwaters of the bay a town which he called Providence, "for God's merciful providence to me in my distress." Soon after, other settlements were made at Newport and Portsmouth on the island which gives its name to the state and which is said by one authority to be named for the island of Rhodes and by another to have been named by its discoverer, Rhoode Eylanat, "red island." These settlements were later united under the name of Rhode Island and Providence Plantations.

The history of the state centers almost entirely about Narragansett Bay, and it is not strange that very early the colony had a navy of its own. Conscious of the intent of the founders, it resisted any imposition of taxation by the mother country, sinking in 1669 the armed sloop *Liberty* and in 1772 burning the *Gaspee*, vessels which had been sent by England to curb the activities of the inhabitants; and, in reality, these were the first overt acts of the Revolution.

Still jealous of her freedom, the state was the last of the thirteen states to enter the Union; and the strength and insistence of her sons in convention during the early years

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of the Republic maintained the integrity of the state and prevented its partition by Massachusetts and Connecticut. Once firmly established, however, the growth of the state has gone on with few interruptions, first as a farming community, then as a commercial district, and now as a manufacturing state.

POSITION AND SIZE

Position.—The southern shore of Block Island is about 8′ north of the 41 parallel, and the northeastern corner of the state extends about 2′ north of the 42 parallel. The southern point of the mainland, in the extreme southwestern corner, is in the latitude of 41° 6′ N. The east-to-west dimension of the state is somewhat less than the distance from north to south, and it lies wholly between the 71° W. and 72° W. meridians.

Size.—Rhode Island is the smallest state of the Union. From Providence at the head of the Providence River, one may reach Woonsocket on the northern border by train within a half hour, Westerly in the southwest in one hour and fifteen minutes, and the sail down the Bay to Newport consumes but two hours. Delaware, the next state in size, is nearly twice as large, while Texas, the largest in the United States, is 213 times the size of Rhode Island.

RELIEF AND DRAINAGE

Relief.—The upland region of southern New England, an uplifted plain, slopes from the Berkshire Hills in western Massachusetts and Connecticut and from the White Mountains of New Hampshire to the sea. Rhode Island's position in the southern margin of this upland, with no point fifty miles from the ocean, gives it a relatively low relief. The highest point in the state, Durfee Hill, near the northwestern corner, is 805 feet above the level of the sea, and only a small section, in the same general locality, is above 500 feet; while a much larger area, adjacent to the ocean and bay, is below the 200 foot contour line. Mount Hope, the scene of Indian wars during colonial days, is a knoll, 200 feet high, situated on an inlet of Narragansett Bay near Bristol. The surface of the state has a rolling character; the plain has been cut and worn by streams, leaving rounded hills and between them broad valleys, while the invasion of the great ice sheet during the glacial period covered the state with a layer of glacial drift, in which are many bowlders of great size. In places the glacial drift formed morainic hills. In addition to the hills of drift, the glacier left much material scattered in plains of faint relief, called sand plains, a good representative of which extends along the western side of Narragansett Bay from Providence to Warwick.

The most important part of the coast line of Rhode Island is the great indentation, Narragansett Bay, which extends two thirds of the way into the state. The south shore, facing the Atlantic, is low and slopes gradually under the water, so that vessels cannot approach the land except where a river, as the Pawcatuck, scours a channel across the continental shelf. Narragansett Bay was formed by the sinking of the land, which allowed the sea to enter the broad valley now occupied by the waters of the bay. In this broad valley were numerous hills which were not submerged in the subsidence and now extend their tops above the waters, forming the islands of Rhode Island.

Drainage.—The term "river" is applied in Rhode Island not only to rivers proper but also to the estuaries or great arms of the bay. Thus the Seekonk River is a narrow part of the bay extending from Pawtucket to Providence, Providence River is the northern and narrower portion of the bay, and the Warren and Barrington rivers are likewise estuaries. The true rivers of the state flow into Narragansett Bay, except the Pawcatuck which reaches the sea in the extreme southwestern corner of the state. The Blackstone River, rising twenty miles to the northwest

of Woonsocket in Massachusetts, flows into the Seekonk; the Pawtuxet, rising in the western part of the state and flowing through the center, flows into the Providence River; and the Pawcatuck, draining a large part of the southwestern part of the state in its lower reaches, forms the boundary line between Connecticut and Rhode Island.

The invasion of the ice during the glacial period brought to the state a great quantity of loose materials, which were deposited unevenly over the area when the ice melted. Many streams were turned from their former courses and found new pathways to the sea. In cutting down new channels these streams encountered bed rock which halted the erosion at various points, and as the softer materials on the downstream side were removed, falls were formed. Navigation is therefore not possible upon them, but the rivers are valuable as sources of power, especially the Blackstone and the Pawtuxet.

Besides turning many streams from their original beds, the deposition of glacial drift over the state blocked the headwaters of the streams and formed many small lakes. Rhode Island is dotted with lakes. Some are now used for water supply and some as camping sites. Many of these lakes were shallow and filled up quickly, forming swamps, which remain as undrained areas that sometime may be reclaimed to yield rich harvests of vegetables and fruits.

Climate.—The most important climatic control is latitude, and Rhode Island's position between the 41st and 42d parallels of north latitude gives to it a high sun and long days in summer with the consequent high temperatures, and a low sun and short days in winter with low temperatures. Prevailing winds and nearness to the sea are two other factors that determine its climate.

Rhode Island is located in the westerly wind belt (Secs. 61, 62), and the cyclonic storms (lows) and anti-cyclonic storms (highs) of this belt cause great variations in the seasonal temperatures. The proximity to the sea, although less influential on an east coast than a west coast under westerly winds, gives to the state fewer excesses of heat and cold than are experienced by an inland state. In Providence the average temperature of July is 73.4° and that of January is 27.2°, making an annual range of 46.2°; while at Block Island, the average temperature of July is 68.1°, and that of January is 31.4°, giving an annual range of but 36.7°. The difference between the annual range of these two places illustrates the influence of distance from the sea upon climate. Altitude causes only slight local differences, as the relief of the state is not great.

The growing season (Fig. 71), which is the time between the last killing frost in spring and the first killing frost in autumn, is longer in Rhode Island than in any of the other New England states. This period is shorter in the northern part of the state than in the southern part. The last killing frost sometimes occurs in March, but more frequently it comes in April; and the first killing frost is frequently as late as November. Especially along the coast of the state the modifying influence of the sea is felt, and though the winter days are at times bleak, they are never excessively cold. The influence of the sea in modifying temperature, however, is most potently marked in the summer, when the cooling influences of the ocean attract many summer visitors to the state and give a temporary increase to the population. Watch Hill, Narragansett Pier, and Newport stand out preëminently as summer resorts. The rainfall of the state is ample and is the heaviest along the ocean front, where over 45 inches per year is the average amount (Fig. 72). In the northern part of the state the annual rainfall is from 40 to 45 inches; while the extreme northwestern section receives 35 to 40 inches. The rainfall is fairly well distributed through the year, so that the soil is kept moist, and long-continued droughts are not common.

INDUSTRIES

A market garden near Providence

Agriculture.—Most of the soil in the state is of glacial origin. In the uplands it is of no great thickness, and frequently bare ledges are exposed, while over the lowland a greater depth prevails. As there are but small areas of alluvial soil, the greater part of the state has a rather coarse-textured soil. In the uplands the clay, usually in glacial soils, is absent, and the porous and stony character of the soil makes it less valuable than the lowland soil, which contains the clay. According to the soil survey nearly fifty per cent of the state has a light brown sandy loam, the most of this being too rough and too rocky for profitable tillage and best suited to forestry or to orcharding. About twenty-one per cent of the state's area has a mellow brown loam, the most productive soil in the state.

About two thirds of the area of the state consists of farm land, but only one fourth of the total area consists of improved farm land. It is estimated that about 400 square miles, or thirty-seven per cent of the state, is covered with trees, but the growth is not vigorous and most of the trees are too small for timber. A few patches of pines exist, and cedars fill many of the southern swamps, but most of the forest area is covered with hardwoods.

Hay is the leading crop of Rhode Island and potatoes are second in importance. Corn is the most important cereal crop. In the vicinity of the large centers market gardens have sprung up and have been uniformly successful. Providence and the towns in its immediate vicinity offer an extensive market for garden products, and in the southern part of the state the summer resorts make a good demand for vegetables and fruits grown in the adjacent areas. The state is considered a natural orchard area, but only small quantities of fruit are raised.

The most important farm animals of Rhode Island are horses, dairy cattle, and poultry. The large manufacturing centers and summer resorts furnish ready markets for milk, eggs, and poultry.

Mining.—The value of minerals exceeds the value of the agricultural output of the state, but does not equal in value the fisheries. The most famous product is granite, and Rhode Island stands ninth among the states in granite production. This stone is quarried in many places, but the real center of the industry is at Westerly in the southwestern part of the state. The Westerly granite has, because of its fine texture and color, found an extensive market for monumental work. Coal is mined in small amounts on Aquidneck Island, but it is of inferior quality.

Fishing. Narragansett Bay offers a great extent of shallow water which has been used since the foundation of the colony as a fishing ground. Fishing gives occupation to only a very small percentage of the people of the state (one half of one per cent), but the yield is worth in money ten times the output of the farms. More than one half the value

of the fisheries comes from shellfish. Rhode Island clams are widely known and its oysters are shipped in great quantities. The oyster catch is valued at three fourths of a million dollars per year. Scup, squeteague, and lobsters are caught and form twenty-five per cent of the value of all products of this industry.

Making jewelry, Providence

Manufacturing. — Rhode Island is above everything else a manufacturing state, about fifty-five per cent of the working population being engaged in this industry.

The leading manufacturing industries of Rhode Island, in order of importance, are manufacturing of woolen and worsted goods, cotton manufacturing, dyeing and finishing of textiles, and the making of jewelry. To-day Rhode Island holds first rank among the states in the value of jewelry manufactured. The state ranks second in worsted goods, third in dyeing and finishing, and fifth in cotton goods.

Most of the raw materials for manufacturing come from afar. Rhode Island has no gold nor silver mines, no cotton fields, and but few flocks of sheep. It does, however, contain a densely settled district of skilled artisans. The disadvantage of distance from the sources of raw products is compensated by the abundance of skilled labor and by the nearness of markets for the finished products (Fig. 80).

Transportation. – All the railroads in Rhode Island belong to the New York, New Haven, and Hartford Railroad system (Page iv). By these lines Providence is connected with other cities and villages of the state and with other points in New England. One line runs from Providence westward into Connecticut, one extends northwestward to Pascoag and into Massachusetts, another runs northwestward to Worcester, and another southeastward to Fall River and Newport. One of the main railroads of this system connects Providence with Boston and New York.

From Providence extensive trolley lines parallel the railroads and carry on a heavy business in both freight and passenger traffic.

Providence is also the center of a coastwise traffic and is connected by boats with New York and Chesapeake Bay. One transatlantic line, the Fabre, from southern Europe, stops at Providence, and the state has recently erected a new state pier in the city in order to extend its facilities and attract trade. The bay during the summer months is filled with many kinds of vessels, and a fleet of steamers plies between the large resorts.

GOVERNMENT AND EDUCATION

Government.—The settlement of Rhode Island in somewhat isolated towns developed a purely democratic form of government in

Cotton mills, Manville

which every voter could have a hearing and a direct vote upon every issue. As soon as the town meeting became unwieldy, because of the increasing size of the town, cities organized under representative government. Groups of towns and cities are joined as counties for the holding of court sessions only.

The governor of Rhode Island, elected biennially, has less power than is granted governors of other states, inasmuch as the veto power is denied him. The legislature, called the General Assembly, is a small body; each town or city has one senator, making thirty-nine, and each has representatives according to the population, but the House is limited to a membership of seventy-two.

Education.—The public schools of Rhode Island consist of elementary schools, high schools, the Rhode Island State Normal School, and the Rhode Island State College. The state board of education and the commissioner of public schools have general supervision of the schools of the state. Some of the best features of the school system of Rhode Island are: the large number of professionally trained teachers, the length of the school term, evening schools for those who cannot attend day schools, and the introduction of industrial education, including agricultural education.

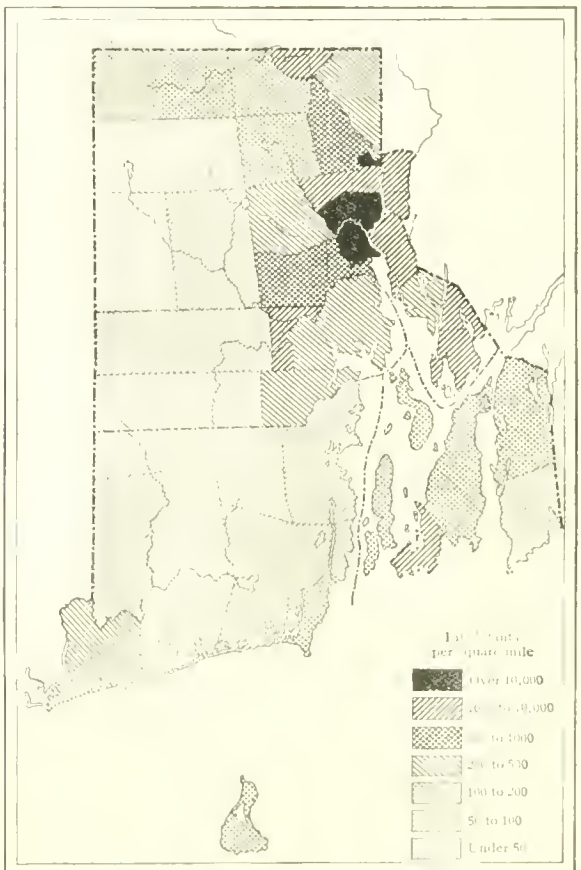
The Normal School trains teachers for the schools of the state. The State College offers courses in agriculture, engineering, and other applied sciences.

Brown University, an endowed institution, is one of the leading universities of the United States.

POPULATION AND CITIES

Population.—Rhode Island has a population of 604,397. Although it is the smallest state in the Union, there are ten states with a smaller population. If the people were distributed uniformly over the state, each square mile of area would contain 563 persons, and this density of population exceeds that of any other state of the United States. This high density is the result of the concentration of people in manufacturing centers. The six cities of the state contain 429,175 persons, or over seventy per cent of the entire population, and the total number of people in villages and cities of 2500 inhabitants or more constitutes 96.7 per cent of the population. This percentage of urban population is not exceeded by any other state of the Union. Two thirds of the population is native and one third is foreign born. The foreign white stock, including foreign born and those having one or both parents of foreign birth, exceeds two thirds of the total population.

Providence, at the head of the Providence River, is the largest city, the capital of the state, and the chief distributing center. It is the second city in size in New England.



Distribution of population in Rhode Island

Brown University, Providence

being exceeded by Boston. Providence is primarily a jewelry center. It is also noted for the manufacture of cotton, worsteds, high-grade tools, engines, and boilers. Besides being the center of the industrial life, Providence contains the state Capitol, Brown University, and the State Normal School.

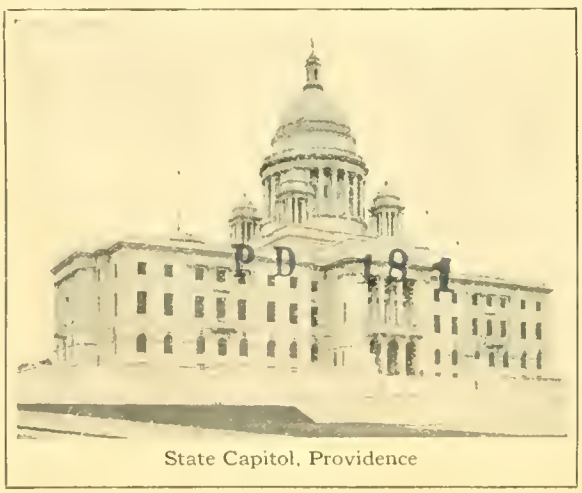
Pawtucket, the second city in population, is at the head of the Seekonk River, an arm of Narragansett Bay, and along the lower reaches of the Blackstone River. Cotton and worsted goods and machinery are manufactured.

Woonsocket, on the Blackstone and bordering Massachusetts, is noted for the manufacture of cotton and rubber goods.

Newport, once a famous port and the capital of the state, is noted as a summer resort. The United States War College and Naval Training Station is located here.

Cranston and **Central Falls** are manufacturing centers. The former is noted for bleaching, dyeing, and calico printing, and the latter for the manufacture of textiles.

Cotton goods are manufactured in **Lonsdale**, **Valley Falls**, **Manville**, **Warren**, **Warwick**, **West Warwick**, and **Westerly**. Chemical products are manufactured at **East Providence** and fish oil and fertilizers at **Tiverton**. **Bristol**, noted for ship building, has sent out many "cup defenders." **Kingston**, in the southern part of the state, is the seat of Rhode Island State College. **Block Island**, **Narragansett Pier**, **Jamestown**, and **Watch Hill** are famous resorts.



State Capitol, Providence

POPULATION OF COUNTIES, CITIES, AND TOWNS OF RHODE ISLAND, 1920

Bristol County	23,113	Cumberland	10,077
Barrington	3,897	East Providence	21,798
Bristol	11,375	Foster	925
Warren	7,841	Gloucester	1,389
Kent County	38,269	Johnston	6,855
Coventry	5,670	Lincoln	9,543
East Greenwich	3,290	North Providence	7,647
Warwick	15,481	North Smithfield	3,200
West Warwick	15,401	Pawtucket (city)	64,248
West Greenwich	367	Providence (city)	237,595
Newport County	42,893	Scituate	3,006
Jamestown	6,633	Smithfield	3,109
Little Compton	1,389	Woonsocket (city)	43,496
Middletown	2,094	Washington County	24,932
Newport (city)	30,255	Charlestown	759
New Shoreham	1,028	Exeter	1,033
Portsmouth	2,590	Hopkinton	2,316
Tiverton	3,894	Narragansett	993
Providence County	475,100	North Kingston	3,397
Burrillville	8,606	Richmond	1,301
Central Falls (city)	24,179	South Kingston	5,181
Cranston (city)	26,407	Westerly	9,952
		The State	604,397

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